

# DENON POA-A1HD control protocol

Ver. 1.0.7

Application model : POA-A1HD

Application terminal: RS-232C

## Connector specification

### I . RS-232C

Connector type: DB-9pin female type, slave straight connection (DCE type)

( 1pin : GND , 2pin : TxD , 3pin : RxD , 5pin : Common(GND) , 4,6,7,8,9pin : NC )

Communication format:

Synchronous system	: Tone step synchronization
Communication system	: A half duplex
Communication speed	: 9600bps
Character length	: 8 bits
Parity control	: None
Start bit	: 1 bit
Stop bit	: 1 bit
Communication procedure	: Non procedural
Communication data length	: 135 bytes (maximum)

## Protocol specification

The following three data forms are defined.

- COMMAND** : The message sent to a system(POA) from a controller(Touch Panel etc.)  
A command to a system is given from a controller.
- EVENT** : The message sent to a controller (Touch Panel etc.) from a system (POA)  
The result is sent, when a system is operated directly and a state changes.  
\*The form of **EVENT** presupposes that it is the same as that of **COMMAND**.  
\*\*Refer to the following table for the contents of **COMMAND** and **EVENT**.
- RESPONSE** : The message sent to a controller (Touch Panel etc.) from a system (POA)  
if the 'request command' (**COMMAND**+?**CR**(0x0D)) has come from a controller.  
The **RESPONSE** should be sent within 200ms of receiving the **COMMAND**.  
\*The form of **RESPONSE** presupposes that it is the same as that of **EVENT**.

**Basic specification:** The command by ASCII CODE, parameter expression

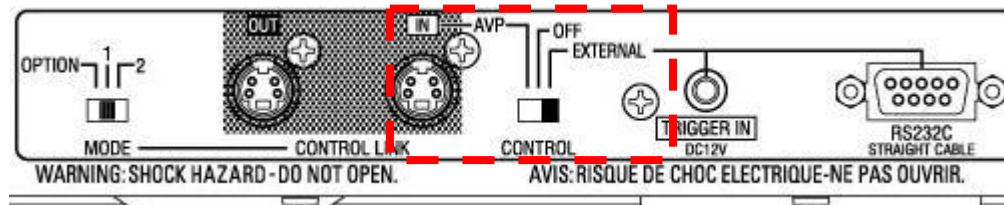
\*ASCII CODE which can be used is from 0x20 to 0x7F: the alphabet and the number of 0-9, and space (0x20), some signs,  
AND carriage return (0x0D) --- It is used only as a pause sign.

**Command structure:** COMMAND + PARAMETER + CR (0x0D)

COMMAND	:ASCII CODE of 2 characters
PA	:Power AMP (POA) Control
PARAMETER	:ASCII CODE (up to 25 characters)
EX.PWON	: Power On

## Others

- COMMAND** is receivable also during transmission of **EVENT**.
- The **RESPONSE** should be sent as opposed to the request command by all the commands with which an **EVENT** exists not need to the another request commands.
- Please set the input channel after setting the power amp.
- Please Power on it after making the **CONTROL** switch of POA-A1HD **EXTERNAL**



## COMMAND and PARAMETER list

COMMAND	PARAMETER	function	Example
PA	PWON	POA POWER ON/STANDBY change	PAPWON<CR>
	PWSTBY		PAPWSTBY<CR>
	PW?	Return PW Status	PAPW?<CR>
	INL1OFF	Input Channel L* Setting	PAINL1OFF<CR>
	INL1RCA		PAINL1RCA<CR>
	INL1XLR		PAINL1XLR<CR>
	INL2OFF		PAINL2OFF<CR>
	INL2RCA		PAINL2RCA<CR>
	INL2XLR		PAINL2XLR<CR>
	INL3OFF		PAINL3OFF<CR>
	INL3RCA		PAINL3RCA<CR>
	INL3XLR		PAINL3XLR<CR>
	INL4OFF		PAINL4OFF<CR>
	INL4RCA		PAINL4RCA<CR>
	INL4XLR		PAINL4XLR<CR>
	INL5OFF		PAINL5OFF<CR>
	INL5RCA		PAINL5RCA<CR>
	INL5XLR		PAINL5XLR<CR>
	INR1OFF	Input Channel R* Setting	PAINR1OFF<CR>
	INR1RCA		PAINR1RCA<CR>
	INR1XLR		PAINR1XLR<CR>
	INR2OFF		PAINR2OFF<CR>
	INR2RCA		PAINR2RCA<CR>
	INR2XLR		PAINR2XLR<CR>
	INR3OFF		PAINR3OFF<CR>
	INR3RCA		PAINR3RCA<CR>
	INR3XLR		PAINR3XLR<CR>
	INR4OFF		PAINR4OFF<CR>
	INR4RCA		PAINR4RCA<CR>
	INR4XLR		PAINR4XLR<CR>
	INR5OFF		PAINR5OFF<CR>
	INR5RCA		PAINL2OFF<CR>
	INR5XLR		PAINL2RCA<CR>

<b>COMMAND</b>	<b>PARAMETER</b>	<b>function</b>	<b>Example</b>
PA	IN?	Return Channel setting	PAIN?<CR>
	INL1?	Return Channel L* setting	PAINL1?<CR>
	INL2?		PAINL2?<CR>
	INL3?		PAINL3?<CR>
	INL4?		PAINL4?<CR>
	INL5?		PAINL5?<CR>
	INR1?	Return Channel R* setting	PAINR1?<CR>
	INR2?		PAINR2?<CR>
	INR3?		PAINR3?<CR>
	INR4?		PAINR4?<CR>
	INR5?		PAINR5?<CR>
	AMPL12NRM	L1/L2 Power Amp setting	PAAMPL12NRM<CR>
	AMPL12BAP		PAAMPL12BAP<CR>
	AMPL12BTL		PAAMPL12BTL<CR>
	AMPL34NRM	L3/L4 Power Amp setting	PAAMPL34NRM<CR>
	AMPL34BAP		PAAMPL34BAP<CR>
	AMPL34BTL		PAAMPL34BTL<CR>
	AMPLR5NRM	L5/R5 Power Amp setting	PAAMPLR5NRM<CR>
	AMPLR5BAP		PAAMPLR5BAP<CR>
	AMPLR5BTL		PAAMPLR5BTL<CR>
	AMPR12NRM	R1/R2 Power Amp setting	PAAMPR12NRM<CR>
	AMPR12BAP		PAAMPR12BAP<CR>
	AMPR12BTL		PAAMPR12BTL<CR>
	AMPR34NRM	R3/R4 Power Amp setting	PAAMPR34NRM<CR>
	AMPR34BAP		PAAMPR34BAP<CR>
	AMPR34BTL		PAAMPR34BTL<CR>
	AMP?	Return Power Amp setting	PAAMP?<CR>
	AMPL12?	Return * Power Amp setting	PAAMPL12?<CR>
	AMPL34?		PAAMPL34?<CR>
	AMPLR5?		PAAMPLR5?<CR>
	AMPR12?		PAAMPR12?<CR>
	AMPR34?		PAAMPR34?<CR>

※ PAIN?<CR> : RESPONSE becomes the following order.  
State of input channel L1 -> State of L2 -> State of L3 -> State of L4 -> State of L5 ->  
State of R5 -> State of R4 -> State of R3 -> State of R2 -> State of R1  
PAINL1xxx<CR> PAINL2xxx<CR>PAINL3xxx<CR>PAINL4xxx<CR>PAINL5xxx<CR>  
PAINR5xxx<CR>PAINR4xxx<CR>PAINR3xxx<CR>PAINR2xxx<CR>PAINR1xxx<CR>  
(xxx ; "OFF" or "RCA" or "XLR")

※ PAAMP?<CR> : RESPONSE becomes the following order.  
State of Power AMP channel L1/L2 -> State of L3/L4 -> State of L5/R5 ->  
State of R4/R3 -> State of R2/R1  
PAAMPL12xxx<CR> PAAMPL34xxx<CR>PAAMPLR5xxx<CR>PAAMPR34xxx<CR>PAAMPR12xxx<CR>  
(xxx ; "NRM" or "BAP" or "BTL")

<b>COMMAND</b>	<b>PARAMETER</b>	function	Example
PA	MTON	Meter setting on	PAMTON<CR>
	MTOFF	Meter setting off	PAMTOFF<CR>
	MTLCHG	Left Meter setting	PAMTLCHG<CR>
	MTCCHG	Center Meter setting	PAMTCCHG<CR>
	MTRCHG	Right Meter setting	PAMTRCHG<CR>
	MT?	Return Meter setting	PAMT?<CR>
	MTO?	Return Meter On/Off setting	PAMTO?<CR>
	MTL?	Return Left Meter setting	PAMTL?<CR>
	MTC?	Return Center Meter setting	PAMTC?<CR>
MTR?	Return Right Meter setting	PAMTR?<CR>	

※ PAMT?<CR> : RESPONSE becomes the following order.

Return Meter On/Off setting	PAMTxxx<CR>	(xxx ; "ON" or "OFF")
Return Left Meter setting	PAMTLx<CR>	(x ; "1"~"4" or "NONE")
Return Center Meter setting	PAMTxx<CR>	(xx ; "L5" or "R5" or "CNONE")
Return Right Meter setting	PAMTRx<CR>	(x ; "1"~"4" or "NONE")

## EVENT (or RESPONSE) and PARAMETER list

<i>EVENT</i>	<i>PARAMETER</i>	function	example
PA	PWON	POA POWER ON/STANDBY change	PAPWON<CR>
	PWSTBY	POA Standby status	PAPWSTBY<CR>
	PWPROTECT	POA Protection status	PAPW?<CR>
	INL1OFF	Input Channel L* Information	PAINL1OFF<CR>
	INL1RCA		PAINL1RCA<CR>
	INL1XLR		PAINL1XLR<CR>
	INL2OFF		PAINL2OFF<CR>
	INL2RCA		PAINL2RCA<CR>
	INL2XLR		PAINL2XLR<CR>
	INL3OFF		PAINL3OFF<CR>
	INL3RCA		PAINL3RCA<CR>
	INL3XLR		PAINL3XLR<CR>
	INL4OFF		PAINL4OFF<CR>
	INL4RCA		PAINL4RCA<CR>
	INL4XLR		PAINL4XLR<CR>
	INL5OFF		PAINL5OFF<CR>
	INL5RCA		PAINL5RCA<CR>
	INL5XLR		PAINL5XLR<CR>
	INR1OFF	Input Channel R* Information	PAINR1OFF<CR>
	INR1RCA		PAINR1RCA<CR>
	INR1XLR		PAINR1XLR<CR>
	INR2OFF		PAINR2OFF<CR>
	INR2RCA		PAINR2RCA<CR>
	INR2XLR		PAINR2XLR<CR>
	INR3OFF		PAINR3OFF<CR>
	INR3RCA		PAINR3RCA<CR>
	INR3XLR		PAINR3XLR<CR>
	INR4OFF		PAINR4OFF<CR>
	INR4RCA		PAINR4RCA<CR>
	INR4XLR		PAINR4XLR<CR>
	INR5OFF		PAINR5OFF<CR>
	INR5RCA		PAINL2OFF<CR>
	INR5XLR		PAINL2RCA<CR>

<b>EVENT</b>	<b>PARAMETER</b>	function	example
PA	AMPL12NRM	L1/L2 Power Amp Information	PAAMPL12NRM<CR>
	AMPL12BAP		PAAMPL12BAP<CR>
	AMPL12BTL		PAAMPL12BTL<CR>
	AMPL34NRM	L3/L4 Power Amp Information	PAAMPL34NRM<CR>
	AMPL34BAP		PAAMPL34BAP<CR>
	AMPL34BTL		PAAMPL34BTL<CR>
	AMPLR5NRM	L5/R5 Power Amp Information	PAAMPLR5NRM<CR>
	AMPLR5BAP		PAAMPLR5BAP<CR>
	AMPLR5BTL		PAAMPLR5BTL<CR>
	AMPR12NRM	R1/R2 Power Amp Information	PAAMPR12NRM<CR>
	AMPR12BAP		PAAMPR12BAP<CR>
	AMPR12BTL		PAAMPR12BTL<CR>
	AMPR34NRM	R3/R4 Power Amp Information	PAAMPR34NRM<CR>
	AMPR34BAP		PAAMPR34BAP<CR>
AMPR34BTL	PAAMPR34BTL<CR>		
PA	MTON	Meter Information	PAMTON<CR>
	MTOFF		PAMTOFF<CR>
	MTL1	Left Meter Information	PAMTL1<CR>
	MTL2		PAMTL2<CR>
	MTL3		PAMTL3<CR>
	MTL4		PAMTL4<CR>
	MTL5		Center Meter Information
	MTR5		PAMTR5<CR>
	MTR1	Right Meter Information	PAMTR1<CR>
	MTR2		PAMTR2<CR>
	MTR3		PAMTR3<CR>
	MTR4		PAMTR4<CR>
	MTLNONE	No left meter selection	PAMTLNONE<CR>
	MTCNONE	No center meter selection	PAMTCNONE<CR>
MTRNONE	No right meter selection	PAMTRNONE<CR>	